Sea Urchin Zone Council Meeting
February 20, 2014 in Bangor

Research Subcommittee Meeting

DMR staff: Trisha De Graaf, Maggie Hunter and Robert Russell.

SUZC Research Subcommittee members: Joe Leask, Teresa Johnson, Tracey Sawtelle, Clint Richardson, Carla Guenther, Brian Preney and Larry Harris.

Meeting commenced at 4:00pm
L. Harris: If you are going to have a Fishery Management Plan (FMP), how are you going to go about managing? I just heard a really good recommendation; if the price tanks, shift the days to later in the season when the prices are better.

M. Hunter: Just because buyers are not able to offer a good price, it doesn't mean that they don't need the urchins. The price is driven by the world market.

T. Sawtelle: I was paid $3 and a diver in Cutler was paid $5.

M. Hunter: Sometimes there are arrangements made with buyers. But overall, the buyers are limited by what they can pay by the market in Japan.

T. Sawtelle: This is the first year they are not bidding on price. As far as not wanting the urchins, they are getting too many out of Newfoundland.

D. Norris: The exchange rate went down for the Japan yen as well. Last time it dropped down to this level was many years ago.

J. Leask: I was wondering about the Penobscot River closure due to mercury. Will that extended to urchins?

M. Hunter: It should.

J. Leask: It is the upper reaches of our area. I am wondering if the state was going to close it, a 2 year shut down for harvest of marine species. I want to know about testing. There is a Penobscot Bay conservation group, the Penobscot Bay Alliance. They are highly aware of things, i.e. storage facilities for coal tar to light up streets in Islesboro. I asked about testing urchins in a stretch up in Pen Bay.

D. Norris: The coal tar bubbles to the top in Penobscot River; I have dove it before for a project.

J. Leask: At the state level, what is their plan for testing?

T. De Graaf: They have been testing for some time to come up with the closure for lobsters and crabs, and will continue to do so for another 2 years. I will have to look into if they plan to test for any other marine species.

C. Guenther: In the narrows, it is a highly ecological beneficial area that entrains larvae. It entrains the mercury in the water column there as well. The latest reports in Eddington are relatively stable, however, it may have gotten elevate with the opening of the Veazie Dam.

J. Leask: It would be critical to expedite testing prior to next season.

C. Guenther: Especially after the spring run-off.

L. Harris: What has just happened is discussion of 10 years of status quo in this situation. Then some testing and action. We just went over some possibilities in Zone 2 and why we can't do something different. Spoke about shifting some days, but that got shut down because the processors won't want it. If we are going to have a FMP that codifies the status quo, then fine. If it does, I

would like to have Brian Preney's rational for triggering more days as having a 2 year trend in an upward direction. So there is some hope that if some things do change, there would be some extra days given, or even new licenses issued. We have had some new things put in, such as tote limits, log books, culling on bottom. But only after things were getting really bad did that happen.

J. Leask: The sky has been falling since the 1990s. Overall with everything in front of us, I think the urchin council over the years made some pretty decent decisions. If you look at the resource we sold, when it was sold and for the price – we are all better off. We have made more at it than we deserved. Here we are in 2014; this is the first year that I have put in a whole year of urchining – Zone 1 to the end of Zone 2. I have seen more of the coastline since we have had 150 days. I have seen more urchins this year than in other years. A lot of combinations of all sizes in different places. There is a healthier resource this year compared to the last half dozen. I have seen other species showing good recruitment. The water is colder, longer winters.

D. Norris: There is something associated with starfish populations going up that is tied to urchin populations increasing.

J. Leask: We need to experiment with the restoration of an area to show it will work and document how. We have discussed all options, culminating with tote limits. I think that tote limits in culmination with a good spawning year. Shifting days…

T. Sawtelle: I was talking about moving the days when the market is flooded to be able to move the days to the end of the season.

J. Leask: If we don't take the urchins, then they will spawn.

C. Richardson: Tracey pointed out that if you don't take them, the landings will look down and then they will think there is something wrong.

L. Harris: If processors are glutted, then maybe they would be interested in a longer season and more opportunity to sell later.

J. Leask: If the product held up.

L. Harris: We also talked earlier about a rolling closure up the coast, following the spawn. This isn't as cold a winter as normal. It is still 40F at Jefferies, 37F at Portland Head.

M. Hunter: The Department is experimenting with swipe cards in elvers. If it works, then fishermen would maybe be able to pick days. You talked about enforcement actually enforcing, well this is a situation that will require a lot of enforcement.

J. Leask: There are people who are working around the tote limits. People are coming in really early with 7, and then going back out for more, or coming in with more than 7. There is a guy who is fishing both zones, both seasons with a native license.

M. Hunter: The department is working on this.

J. Leask: Everyone needs to play by same rules.

M. Hunter: You get your card with 38 days. With elvers, they even have quotas. Then you can fish safely.

J. Leask: The buyers have said no in the past. They would have to know when to send their trucks down. There would have to be the ability for a Zone 2 fisherman to hold their urchins then.

T. Sawtelle: You should be able to car them, have them tagged on bottom and then sell.

J. Leask: Could be like groundfish where each license has 7 totes for 38 days and you could sell those totes, transferable.

D. Norris: There is more than one way to arrange that swipe card. Each month you have to use so many of those days, or even weekly. It will ensure the steadiness of supply to leave the plants open. Has to be a method to spread it out so not everyone uses the days in December. It would help on a stormy week for buyers as they wouldn't lose their whole week if a storm happened if the first three days of the week we a wash due to a big storm.

L. Harris: If swipe cards are a possibility with weekly or monthly quotas, does that sound like a suggestion to put forward?

D. Norris: I like being able to save some of the missed days to be able to use them next year, but I know they won't like it.

T. Sawtelle: But those weather days are worked in to season for conservation.

L. Harris: What about the moving days to the end of the year?

T. Sawtelle: They told us they didn't want them.

D. Norris: But we have to fish because it is an open day.

L. Harris: If there was an understanding with the buyers to add a week to the season?

D. Norris: You have got to get them the urchins when they want them.

L. Harris: Swipe cards may make things much more doable when earlier proposals where suggested.

T. Sawtelle: A call in system, once you call in you have to fish that day. If you broke down, then you lost that day after it was called in. There would need to be someone on the other end though.

J. Leask: Pat said at a groundfish meeting the other day that there are no more people. So, we can't put something in that won't have support.

L. Harris: Dean's suggestion for three days a week?

C. Richardson: There should be a time of day limit. If there is a seven tote limit and they are there all day….they are taking more than the limit.

T. Sawtelle: For scallops too.

J. Leask: For shrimping we had a time of day limit. It treats everyone equally. When the tote limit was initially floated, I suggested a time frame.

T. Sawtelle: A lot of guys like to work the tide.

D. Norris: Cobscook has a lot of tide.

J. Leask: You may have to fish an area other than Cobscook; it could use a break.

D. Norris: Different days can be different for tides, but you need to get out of the water when it turns.

J. Leask: There is a lot of different bottom types in Cobscook.

D. Norris: Pock marked clay bottom up there.

L. Harris: Potential for adjusting the season?

D. Norris: The card itself would allow for that.

L. Harris: You would have to have some communication with dealers. You still have 38 days, so many days a week. But some sort of system in place that allows buyers to not have to buy product.

M. Hunter: Buyers would have to have some communication to make that call.

D. Norris: They do that in Alaska. Every opening is an emergency "opening". If red tide was bad, decreasing price for geoducks, then you close it and keep testing until they are good to harvest again.

L. Harris: I was in Homer for a 24 hour opening for halibut. Talk about a zoo.

D. Norris: The 55" herring boats with a 3 day opening on the west coast have turbine engines and airplanes for spotting herring. That whole boats living in made over 3 days, Inefficient as heck. But very unique.

L. Harris: Are we in agreement….?

D. Norris: If swipe cards could do this.

L. Harris: For a one year trial?

T. Sawtelle: So you could see how much of a pain it would be.

J. Leask: I would be willing to discuss it with the full council.

L. Harris: That is our role, to bring it to the full council. We can't make policy.

M. Hunter: You could put something more general in the plan about increasing safety and flexibility.

T. Johnson: Would it be a pilot for everyone or voluntary?

L. Harris: Since Zone 1 has few enough people, maybe you do it down there first.

D. Norris: If you put it in place, would there be a balance in costing us days? You are going to lose storm days. You would have to figure it out.

L. Harris: The number of days would need to be determined. But a flexible season in consultation [with dealers].

D. Norris: I would be for it as I could fish when I want and would get a better price.

L. Harris: We are still talking about tote limits, logbooks, time limits, if any flexibility in the season, the processors have to have a part in the discussion.

M. Hunter: What about getting rid of the zones? I fail to see what function they serve.

J. Leask: I don't think we should get rid of the zones. We should hold a specific meeting just to discuss that.

D. Norris: What would be the effects of dropping it now?

T. Sawtelle: I want smaller zones!

B. Preney: I have had a few people ask to expand Zone 1. Give up Kittery to Portland or Pemaquid and close that in exchange for a transition zone up the middle of Penobscot Bay. We are going to ground down the eastern part of Zone 1 if we don't have any other place to go. We have had some good divers switch from Zone 2 to 1 that has put more pressure on Zone 1.

J. Leask: Vinalhaven can take the current effort, but if more divers come in then it will get mopped up. I think Cobscook takes too much pressure because of Whiting & Dennys Bays and the dynamic with all buyers being there.

B. Preney: The dynamic has changed in Zone 1 too – they are all in Tenants Harbor.

J. Leask: I think Zone 1 is at a balancing point. It doesn't need more divers. You might want to stop the switching for a bit. One of two more good divers anywhere, it could tip the balance.

T. Sawtelle: The last couple of years we have had more people fishing since the Whiting & Dennys Bay opening triple the boats. They fish that the one day, then they have to fish the other area in Cobscook. It used to be 6 or 7 boats, this year there were 50 draggers fishing.

J. Leask: A lot of guys that were way Downeast this year will likely be shifting back to the west. There will likely be a lot of moving, there always has been.

D. Norris: Let's talk about the effects of closures. You close one area and you put more pressure in another area in another place. I think that you have to do something different, either by tote limits, or other conservation measures. There are certain areas that I would like to close, but for any real results, you need to close the best spots. And that means you are going to be burning some other places.

T. Sawtelle: Folks down home have said if you have a 38 day season, you fish 13 days in one area, then 13 days in another and 12 days in a different part of the bay. It is a rotational thing, but all in one year.

D. Norris: But you need to get the numbers on the bottom right, to set the fishing right.

T. Sawtelle: You would have so many days it was fished, and then it was closed the rest of the season.

T. De Graaf: You could have it married with scallops too.

T. Sawtelle: It would be nice to have it so that every year it was a bit better than the year before.

B. Preney: I heard about a bill to stop the salt slurry being put on the roads. I know there has been something that has gone into the water and killed off urchins.

Full Sea Urchin Zone Council Meeting

DMR staff: Trisha De Graaf, Robert Russell, Brent Chasse and Maggie Hunter.

SUZC members: Joe Leask, Steve Eddy, Teresa Johnson, Tracey Sawtelle, Clint Richardson, Brian Preney and Larry Harris.

SUZC member not present: Ian Emery, William Smith, Atchan Tamaki, Chris Buyers, Ed Fagonde, and Chuon Muth.

Public: Carla Guenther and Tristan Smith.

Meeting commenced at 5:12pm

Welcome

C. Guenther: I am interested in learning more about urchins and the FMP process.

B. Preney: No quorum, we cannot vote on any items, including the minutes.

Approval of Minutes (01/30/13)

Held Over. No Quorum.

DMR Updates – Stock Assessment Results

B. Preney: We will move to the assessment and take this information back to our zones prior to next meeting where we set the season.

M. Hunter: Landings were presented last month, since then we have finalized the 2012-13 landings. One report that was missing was for Zone 2 with 37,000 lbs. The $3.10 price was a record for the fishery, with general trend to improving prices in the fishery despite landings declining. Broken down by month comparing last with current season, in general prices are lower this year, and landings in Zone 1 are going to be up which is in line with the 15 days season compared to 10 days. Landings for Zone 2 in October are up, with November and December down compared to last year, but not complete yet. Really hard to tell where we are as the data is incomplete. Lots of people went scalloping when that opened in December, so urchin landings may go down that month.

J. Leask: How many more divers?

M. Hunter: The Zone 1 active divers have increased – I consider them active if they have gone at least twice – it has increased from 32 to 37. In Zone 2 there was a decline in active harvesters.

The assessment is built on various datasets – spring dive survey, port sampling, and log book data. Port sampling gives us the catch rate, which can be very misleading and is considered by stock assessment biologists to be a poor indication of abundance and the literature is full of instances that they can be deceiving. However, that was one of the only things we had when we started to monitor this fishery as we only had landings, and catch rates are a hair better than landings and are relatively cheap to collect. Over the first few years the catch rates declined, and that cannot be good, but going up might indicate things are good, however, fishermen are always improving and changing ways they fish, so it is really a one way indicator [down]. So when we saw the catch rates go up, it may have been more of people leaving Casco Bay and fishing east in Zone 1 [serial depletion]. The increase in Zone 2 may have had to do with new dock that was built in Jonesport and all the buyers descending on that area, which was previously a minor port.

B. Preney: In Zone 1, if our landings are up, did we fish a lot more?

M. Hunter: This is reported in pounds per hour, so it is corrected for if you may have been fishing a longer day.

B. Preney: Really, I don't see that.

M. Hunter: We look at it as "I dove 5 tanks and caught less". It could have been an increase in number of days that people would go. Or they went in December instead of September.

C. Guenther: Or it could have been some new guys who were not very good.

M. Hunter: That last point [2013] with the decline, it is only based on 25 interviews.

J. Leask: We may be getting older.

M. Hunter: Or you are getting smarter too. But there are all sorts of problems with this, and we don't use it in our assessment. But I wanted to present it as I have in the past. Our survey index did not show any improvement, but why was there improvement in those 4 years [2009-2012] in the catch rates?

M. Hunter: Dive survey has randomly selected sites so all the areas will be chosen, all on hard bottom where likely to find urchins.

R. Russell: All the sites selected from a GIS layer with NOAA charts and other data with bottom type. If there is any rock component, then we dive on it. Joe Kelley has a map with all the hard substrate. We do find some of the areas are covered in mud when we go down to them. We start deep and do perpendicular transect to shore.

M. Hunter: We report on the number of grams of urchins per square meter for the survey data. In both Zones, they [2013] are the lowest in time series. Zone 1 took big decline in 2003-04, and then stabilized at a very low level. Zone 2 declines steadily until 2004, when the days were cut – which appeared to have stopped the decline; however, resource has not recovered. The 2013 survey was a little bit lower, in both Zones. Back to Zone 1, there was 4 recent years that catch rates increased, but when you look at the roe, it went down when catch rates went up. Brian Soper in 2009 pointed out that we opened in September in both Zone 1 and Zone 2 and the price crashed and everyone switched to fishing for quantity to cause the increase of catch rates in combination with roe decline. You could also argue that this is some kind of climate change thing as water is warmer and roe

quality not as good. In the 2009, 2010 and 2011 years, Zone 2 did better roe than Zone 1when they both opened together, and supports idea that Zone 1 fishermen have changed their strategy and they are bailing and just fishing quantity, not quality.

J. Leask: Most of it has to do with the feed. I see folks bring in good urchins, over 14% roe. There is a ratio with the feed and the urchins, if they are there long enough, they will get good. In 2012 we all saw percentages drop off because it is really warm, but we are seeing it better this year as it is colder.

B. Preney: Zone 2 is shifting form barren state to kelp, and they are getting better. They always do well before they die.

M. Hunter: Even in December, Zone 2 is beating Zone 1[for roe]. Zone 1 guys only have 15 days so they might go where they can.

D. Norris: If you have no choices, someone will put something in their bag.

J. Leask: How many people?

M. Hunter: The roe information is from the dealer log books, so it should be everyone.

J. Leask: Is it tested out or processed roe numbers?

R. Russell: They have been reporting out since 2004, so they should not have changed what they are reporting and it is a trend.

M. Hunter: Zone 1 December draggers have been bringing in junk, 8%. They average 16 totes, based on 2012-13 data. Before 2008 it was consistently 12%, and then it dropped. Maybe climate change, but it Zone 2's didn't drop during the same period.

J. Leask: Zone 1 doesn't have tote limits.

M. Hunter: In conclusion, there has been no improvement is stock conditions based on the survey results. Since 2004 we have recommended a closure for Zone 1, and that remains our scientific recommendation. All indicators for Zone 2 are trending down.

J. Leask: Not all the indicators are down, what about landings?

M. Hunter: True.

J. Leask: Then you should change that statement.

M. Hunter: You're right.

T. Smith: Didn't we ask you to go to new sites last year?

R. Russell: We did.

T. Smith: In your Penobscot Bay Zone chart, are Zone 1 and 2 in there?

R. Russell: The first 3 regions match Zone 1 and we base the survey regions by landings per port, so they are huge areas.

T. Smith: When you survey Penobscot Bay, when you dive in the Zone 1 section, is it logged in as Zone 1?

R. Russell: Part of the Zone 1 fishing boundary splits region 4.

T. Smith: The west side of Penobscot Bay in region 4. When you go to that area and do that survey and transfer the data over to Zone 1 and 2, do you make sure the Zone 1 numbers into the Zone 1 data?

R. Russell: Those two fixes station are in Zone 1. This is a fishery independent survey, but blue vs red graph slitting the data between the Zones, a small fraction of Zone 1 sites in region 4 gets accounted to Zone 2. The survey regions are based on landings in ports. So, there is a little bit there that should go in Zone 1.

T. Smith: So there is a bit that should be in the other Zone.

R. Russell: There is a small wedge from Camden up to the line, yes. The Zone line shoots in above Camden. This is based on a GIS layer and landings prior to 2000. We want to survey areas where there are commercial practices taking place. It is stratifying the sampling so we survey the areas activity is.

D. Norris: The chart is so small it is hard to see the error bars. Is there a point there that 15 days is a bad idea?

M. Hunter: We have thought it was a bad idea all along.

J. Leask: With the stationary sites, do you have what their densities were and where they all are now?

R. Russell: They have all crashed very quickly after we started. We had industry members choose the permanent stations..

J. Leask: These stationary sites have been disclosed. We went to them and there was nothing there. Of course your model is going to go down when they are cleaned out; of course your model is going to go down. For randomize sites, those are better.

T. Sawtelle: The random sites are like a lottery and it could be devastating.

R. Russell: You need a minimum threshold to account for variability between sites. We have played around with the number of fixed vs. random sites. The fact that it does a fairly regular movement you are getting a pretty good spread.

B. Preney: I have my own reservations on the survey, but we are not going to resolve that tonight. Let move along.

M. Hunter: I will redo the index and take the fixed survey stations out for the next meeting.

J. Leask: I don't want to gloss this over as it is going to dictate what our season is going to be. This is critical for our decisions. All the indicators are not pointing down; there are other indicators that are pointing up. We have had cut backs and cutbacks, and I want to hold the line.

B. Preney: We will have a discussion on this after Maggie is finished.

T. Smith: A good policy would be to not have industry members involved in the survey.

J. Leask: I agree with Tristan to a degree. I support Robert and the survey, but his information at times has been sacrificed. Sites are disclosed. In order to have an accurate assessment, we need to privatize this.

C. Guenther: If resource was doing really well, guys wouldn't feel the need to dive on areas where abundances are, you would go to your own spots. It is good to talk about, we are moving away from showing all of the survey sites for the Scallop data in the Scallop Advisory Councils.

D. Norris: You don't want to take away the view point of an industry person doing the survey, they are highly trained divers. You put someone new out there and they will find half of the urchins than are there. But on the other side, why would he go to those hot spots and shoot himself in the foot as the site will be worse the next year?

B. Preney: Moving on.

M. Hunter: We have a computer model that models the urchin stock dynamics. You have natural mortality, fishery removals, growth and you hope at the end of the year you have the same amount as you started with. Yong Chen helped to build this model that provides the harvestable biomass each year. This goes up to 2012, it does not include the 2013-14 fishing season. The 2012-13 landings were 1.5 million or 700mt. If you didn't fish at all, it would recover. If you continued at the current level, the stock will continue to decline, which is 700mt. If you cut back to 454mt (1million lbs) you get some slow recovery. So, we recommend that Zone 2 try to reach 1 million lbs, which is a 33% reduction from 2012-13 levels.

T. Sawtelle: In Whiting & Dennys Bays, the first day we fished just over 3 hours and had 4,000 lbs in the 2012-13 season the first day. There were 50 boats up there. The number you estimated only said 16,000 lbs, which is too low.

T. De Graaf: Those were dealer reports and preliminary at best. We had better estimates for removals. This season I estimate that 360,000lbs were removed by the end of December in there.

D. Norris: I think we should raise the research fee, and if you work on the project you get your money back and it would drive a lot of people out of the fishery.

T. Sawtelle: It will all just go to the general fund.

C. Richardson: We shouldn't be in the business of driving them out.

T. Sawtelle: They keep dropping every fishery they can do. In Canada it only costs $20 for a license.

B. Preney: OK, Maggie has one more slide.

M. Hunter: We are struggling with not knowing if we achieved some of that 33% reduction this year. October landings are up this year, but people moved to scalloping in December, and the [urchin] price was horrible in January, but scalloping closed in February so there will likely be higher landings for the remainder of the season. I wish we could have delayed this meeting until we had the complete data set and could really say whether the measures we put in place have worked and I think you guys should be given some credit for culling on bottom. What did the tray limit do? In October 2012, the average catch for one harvester was 709 lbs, in 2013 it was 560 lbs, which is a 21% reduction – so it looks like the tote limit was effective, however, overall landings were up. Perhaps there was better weather and more participants? Although you are reducing what you catch, those urchins are still available later in the season with a tote limit so the 20% reduction may not hold throughout the season.

D. Norris: What was the expected reduction with the 7 tote limit?

M. Hunter: 19%

D. Norris: So right on the nose.

T. Sawtelle: There was an 8.8% decrease from the other option we considered which was a 30 day season with 10 totes.

J. Leask: Someone did the math on that with the totes so it didn't quite add up to the 23%. What does Pat think?

T. De Graaf: Pat has not had a chance to review this information, so these are scientific recommendations, not management recommendations. We will have those for the next meeting, but you can take this information back to your zones and be ready for the next meeting where we set the season.

Discussion - Stock Assessment Results

B. Preney: I would like to entertain a rebuttal to the science recommendation.

D. Norris: The most important thing they are basing all indicators on is the survey - the blue and red bar graph. Looks like an 8% decline. Those most we would make for a cut would be to go from a 7 to a 6 tote limit. Most people get the 7 totes now, and that one change would cut the take of the biomass of 15%, that is the most of a limit that they could ask that we cut. 30% seems like a lot. Something more needs to be explained to me.

M. Hunter: It is a 33% cut in landings.

D. Norris: A cut of one tote would be 15%, if everyone catches 7 totes. I think the answer is in how the model is working. We have looked at the projections, but have we gone backwards to see how the model has done year to year?

M. Hunter: The problem is we have never taken the model's advice, we have never done it.

D. Norris: How accurate was the model from year to year?

M. Hunter: The model has been pretty consistent on saying we need to get down to 1 million pounds.

D. Norris: But what if we did cut it to 1 million pounds?

M. Hunter: I will check to see if the model could have predicted what happened during a couple of years where the biomass was at 2 million pounds.

D. Norris: Is the model is adaptive?

M. Hunter: We assume natural mortality and growth rates are constant over the time series.

D. Norris: We don't have the information that if we did do what it says that it would eventually go up.

B. Preney: It is a really complicated model; Commissioner LaPointe said we have to use a number of different indicators because we don't really understand it.

T. Sawtelle: The 23% reduction last year with totes and days, that was from model?

M. Hunter: Those [totes]were estimates from dealer data. Days are easy.

T. Sawtelle: When I do the math, 30 days and 10 totes = 300 totes, 44 days and 4 totes = 176 toes – it don't add up.

M. Hunter: You're assuming that everyone is getting all those 10 totes. How we came up with those percentages, was based on dealer logbooks and anyone who caught more than 7 trays, what would their landings have been, and now they are going to have reduced landings. But there were other people in that dataset that never even got the 7 totes to begin with, so it is weighted. It is different if you are just straight multiply the days by totes; you have to look at the associated percentage of each day and tote.

T. De Graaf: It is a weighted calculation, you can't just do the straight math as there are assumptions involved and not everyone will be affected the same way by the tote limits. So that is taken into consideration with all the different tote and day combinations.

B. Preney: What does Joe think?

J. Leask: Atchan just texted me. "As a processor we need steady supplies." [Supports a tote cut vs. a day cut]. If we don't have buyers/processors, we don't have a fishery. The formula on the board is the best available science. I am seeing some good indicators. Our Commissioner is very knowledgeable, but this is the data that he is going to be looking at. Last year he was flexible, however. They are saying a closure for Zone 1, and I don't agree with that. I put a lot of time looking around the entire state. We are considering this year and long term. I refute what you are saying for Zone 1 and 2 based on what I am seeing. The graphs show the numbers dropping, the landings show the numbers going up, but you can only catch what is there. There is a critical need to address Zone 1 before it will stop continuing what it has done. Penobscot Bay has a clear ability to reproduce urchins. I also see good evidence in MDI and in Frenchman's Bay with spawn coming out through. I will give you all kinds of survey information if I knew that someone else wouldn't go to those sites and take them. They are biomass areas that still contribute spawn and produce urchins on adjacent ledges. The best thing for industry, with what Atchan says, is we need to tackle draggers in Zone 1 for their own sake as if they continue to harvest the way they have been then they will be out of business. We need to address it now. I think Zone 2 needs to be left alone. I have seen a lot of recovery.

M. Hunter: I am afraid for every site you see a recovery; we see one that is in decline.

T. Satelle: Pat said he would leave us alone for two years last year.

T. De Graaf: That was contingent upon a 23% reduction, and we only achieved 13% as the size changes were not adopted.

T. Sawtelle: Your harvester logbook data now is going to be accurate because all the dealer data before was incorrect.

J. Leask: I am in the water a lot longer than Robert. When I go out, I know urchins. There are places that are still barren. Other places that we have had recovery. It is clearly better this year compared to last year. I don't know what happened in the Zone 1 late season. My hope is that there is a banner recruitment year.

D. Norris: All depths or up tight?

J. Leask: A lot of urchins you are only going to see at small depth. Most of spawn in Penobscot Bay is good, conducive to reproduction.

D. Norris: Up tight smalls in Downeast Maine.

T. Smith: I only went diving 3 times this year, to same spots I have been diving for 20 years. Each one had healthy coverage of small to large harvestable urchins in it, all looking healthy. Also, I only took the top 5% of what was there, up tight urchins in some feed.

B. Preney: Why did you only go 3 days?

T. Smith: I don't need to. I'll go more next year. But they are loaded. Places I fished 20 years ago, and I depleted them, now they are back in Zone 2.

J. Leask: Did you see that the urchins were overrunning the ledge? Evidence of feed depletion?

T. Smith: Each spot had a lot of feed.

L. Harris: On one hand I think it would be worthwhile to go a second year while the data from this year is really analyzed. It would be really interesting to see what happened in the Whiting & Dennys Bays compared to the rest of Zone 2. I am hearing 3 kinds of data coming out of this discussion. Robert's data I have great confidence in and it is done in a systematic way. I also hear good things from Joe and Tristan, but it is unsubstantiated and no data; I have been hearing this for years now. I also hear Brian saying the possibility of extending Zone 1 into Zone 2 and certainly there needs to be some changes. I think it would be worth the gamble to go with the status quo while we get the data on the changes that have been made. In Zone 1, they went with 10 days for 10 years and there was a response that was positive, and there was an increase to 15 days. Now the landings and number of people have gone up and it may have negated that gain. There have always been reports of little urchins and they take 2 -5 years to reach minimum size and there is a lot that can happen to them. I hope Joe is right, I see some signs down south and there are some small increases around Isle of Shoals, but there isn't a big pulse that I have seen in my recruitment data in terms of settlement on the bottom. Maybe there are some warning signs, but I think it is justified to hold on for one more year until we get all of the data from this past year and what happened in Whiting & Dennys Bays from that 4 day rape and pillage session in 2012-13.

B. Preney: Tracey?

T. Sawtelle: I don't like it, but I don't want to see it overfished. I would like to give my license to one of my boys. I feel that there was less effort this year in Zone 2 as everyone was scalloping. Only can get 7 totes. The guys that go out for 2-3 totes bring the numbers down. I think your logbook data is going to be good. I would like to see this year's data before another decrease. Seems like we are always a year behind.

B. Preney: It is pretty clear that we should wait another year before we do something drastic in Zone 2?

D. Norris: It is hard. If this data is accurate, then a one tote cut might be prudent under the circumstances. Any more than that would destroy us.

B. Preney: I think Zone 2 is a more drag orientated fishery. I know I dove my butt off scalloping last year. This year I missed a lot of days because it has been horrendous. When I hear about people getting small amount of trays in Zone 2, maybe they couldn't get out of the dock. I know bad weather is detrimental to divers.

T. Sawtelle: If you look at the charts, if we take a 30% reduction, it shows you want 5 totes. So, it looks like you didn't get what you want.

M. Hunter: No, the model is still saying a 33% reduction.

B. Preney: So, the science recommendation was for a closure in Zone 1. We did pretty well this year. I found a lot of urchins, and I swam over a lot of urchins. I was in the 9-12 tray range, which is good diving for Zone 1. We went in 30-40 knot wind; temperatures were in single digits, unlike September where they dove all 15 days. Under those conditions, I think the biomass is in pretty good shape. I do think some measures should be considered, but a complete closure is not acceptable.

C. Richardson: I have seen more urchins this year. All sizes and all depths, all grades and I only travel 10 miles of coast line. We fished from Camden to Port Clyde, a lot of volume up there. I fish in September and I left a lot of urchins behind. One day I got an 8%, but there was probably mostly 11%. In years past I used to go for 9-10 trays/day, I averaged 13 this year and I couldn't put 2 tanks on my back. Our data doesn't jive; they are not the same. I wouldn't recommend a cut. I see what your graph on draggers, and that is bordering on criminal, but I don't know what to do on it. That is why I came up with a tote limit for Zone 1 to be discussed in earlier meetings.

T. Sawtelle: If there is a tote limit, it all should be equal.

M. Hunter: If a Zone 2 dragger can make a living on 7 trays, I would think a Zone 1 dragger could.

D. Norris: It would make it equal.

J. Leask: I am concerned about setting a precedent for having different tote limits. If we are going to have one, it should be a broad brush stroke. Dana Sprague talked to me last night; did he talk to you Brian?

BP: We have been talking about it for a few meetings. There was no conclusion.

J. Leask: Dana was very adamant for a 10 tote limit for Zone 1. He quoted a lot of other Zone 1 guys who said they would support that. I do tend in Zone 1, and I will reiterate that I would rather err on the side of caution in Zone 1. I would support a tote limit, but I don't support closing Zone 1. You are getting information from log book each year, and the survey. It will establish a trend.

T. Johnson: I leave the numbers of trays and totes to harvesters. I think if status quo is supported, we need to think about other things. Moving the biomass around, increasing the biomass. Obviously we need to set a season. We have talked about re-seeding, conservation areas that would allow us to improve roe, protect areas that are good grounds for spreading the seed. If we did status quo, I think we need to consider doing other things.

B. Preney: Maggie – suppose Zone 1 was to close. How long would it take and what would we see?

M. Hunter: Regions with stuff left would spread and grow. Other areas like Southern Maine may come back or not. I can't say for how long. What we are seeing is no recovery in Zone 1 and we are removing stock each year. If you want to dub along for another 10 years the way we are, that is an option.

B. Preney: You don't have any evidence that it would come back. We have tons of areas in Southern Maine that are effectively closed and have not come back.

M. Hunter: But fishing it is not helping.

J. Leask: I think fishing helps, look at Cobscook Bay for example. I have re-seeded areas and it is now overrun. It is an area that urchins will theoretically spread from. What documentation would you entertain as evidence so I can show you? I have a GoPro camera. Realistically, there is this ledge that run east to west and I am willing to bet that area will continue to do what it has done. I am not convinced that leaving the bottom alone, it will come back. Fishing an area will encourage yellowtail to spawn; it is documented in the literature.

R. Russell: What would happen in Zone 1 if we closed? Well, the only thing we learned from the closed areas in York, Schoodic, etc. is that if there is a minimum number of urchins left on bottom, they will recover. Western Maine has not recovered because not enough was left there, and now there is that fuzzy red algae that has taken over [urchins won't eat it]. We need to figure out a balance between conservation and allowing industry to continue. All we have seen is a flatline in the biomass and no recovery. You need to help it where you can, but just saying "well, it won't recover, so let's fish it" doesn't go with me.

M. Hunter: If you are saying we lost Boothbay, it is still declining.

B. Preney: Why did it die?

M. Hunter: I don't know.

B. Preney: Then why cut the fishery?

R. Russell: You don't want to kick it while it's down. If you want it to rebuild, you don't touch it. The Commissioner will keep you working, but we have to say look at what's out there and it makes no sense to fish on it because it needs to rebuild. If you want to talk about disease, it is all part of the same equation; you are never going to get back. Is it 1%, 2% all the math discussion, don't get bogged down, we need to do something to help it because it is bleeding.

C. Richardson: We need to close an area in Zone 1, put some eggs in there, big and small. See if they will survive. If they survive there in a certain amount of time, then they will spawn.

T. Smith: If you are putting a little bit of seed in, you don't have to protect those urchins are protected by law.

R. Russell: Amanda moved a lot of small urchins, and they all died. Crabs wiped them all out. We don't have those crabs now.

J. Leask: You need big ones to protect the little ones. The industry is bleeding; I look at it as stable right now. It is precarious; pointing out Zone 1 is in a small area. The only new ideas I have heard is something along the lines that Bill Sutter was thinking where he wanted to shut down the Sheepscot, deep water that is cold, close to DMR to monitor. It is pretty much dead so guys are not working there. However, it was a historical area of significance and it has produced in the past. With minimal investment and you could get a significant return. We have learned from Cobscook. I would volunteer time to go out there. Only question is where will those urchins come from? I would like to bring in Steve Eddy's urchins. Die mark them and mix with adults and see how juveniles mix with larges. Then simply doing it. Just need the permits and permission from DMR as out of the season as well as a consensus from this council.

M. Hunter: We may be able to do it with volunteers.

C. Richardson: Cat Ledges would be a good spot.

J. Leask: *Didendum* - I have seen urchins eat that. Bill will be at the next meeting and he knows of places in the river. He fished for urchins there until the scallop guys started dragging that area heavily last year.

T. De Graaf: If it is good scallop bottom, would want it closed to those guys as well, so we would have to let the SAC know.

J. Leask: Exactics work great for shrimp and they come back to life. Just put the urchins in there with fresh sea water flowing over them. Water flow is key to healthy urchins, and 99% of the best urchins were in hard running tide and nutrients.

D. Norris: If they are close to spawn, the freshwater will send them off.

J. Leask: Goose Rocks has been decimated by die off. Dead urchins all over, the hot water cooked them and some bleach. Let's outlaw bleach.

B. Preney: To summarize – Zone 1 we are adamantly against closures and we are ready to take on other measures, such as reseeding, tote limits, conservation closures .For Zone 2 – we could stomach a tray cut, but not two.

J. Leask: No, status quo.

B. Preney: That is right, status quo until we get more data.

D. Norris: We will get more data prior to the next meeting.

M. Hunter: Maybe, but it won't be completed.

C. Richardson: We need to just set the season next meeting.

J. Leask: We should just set season.

B. Preney: There will be some rehashing of the recommendations we discussed here, so that will take some time. We also will have the management recommendations.

T. De Graaf: We also need time to set the days in the Whiting & Dennys Bay Area.

J. Leask: Tracey – were there too many days this year in there?

T. Sawtelle: Where the best urchins were, it got hit pretty hard. Junk urchins, no one touched those areas. But yeah, it got hit pretty hard.

J. Leask: When I was up there, there were boats going around and around. There was one place that looked better than last year.

T. Sawtelle: I fished one spot for 5 days, then the tide came up and the other boats came in and pushed me out.

J. Leask: Where they were good, they were very good. Other spots they didn't come around.

T. Sawtelle: Near Birch Island there were piles of kelp in the past. I did a few tows and the urchins filled up right to the chains and not one piece of kelp. All good sizes, but they were like dust, black [thin]. A person should take a couple of loads and leave them in the drag and drop them in a good spot.

J. Leask: I have seen urchins do very well if they don't break the surface of water.

Discussion - Conservation Closures & Creative Conservation Initiatives by Harvesters

B. Preney: We have touched on both of these items, what do folks think?

C. Richardson: In Zone 1 it would work but it has got to be enhanced.

J. Leask: If there was any way Brian that you would be comfortable moving urchins?

B. Preney: Say in the Sheepscot River, I think it needs to be a place relatively close. Green Island didn't work.

R. Russell: Do you think that was because of transport or crabs?

B. Preney: Crabs.

R. Russell: But when we moved them in April, they were happy for a while.

B. Preney: Crabs will wait for them to get weak, they are patient.

J. Leask: there was a learning curve, but they survived for 3-4 months. We should press on to the future. We need to take a chance and move them from closer areas.

R. Russell: There is nothing close.

J. Leask: What about taking them from Cobscook?

D. Norris: You need to be careful of spreading disease. Bringing vectors from other locations.

R. Russell: It was quite the process we had to go through to be able to move them for Amanda's project.

B. Preney: I am more comfortable with a lab certified urchin that is disease free than risking a wild urchins.

J. Leask: I am concerned that they don't have the stressors that the wild urchins had.

D. Norris: You also need large sizes to protect the smalls.

J. Leask: Get big wild ones and mix them with the small hatchery ones.

T. Smith: I am very for allowing the pioneer people move urchins. I brought 6-700 lbs and Benny didn't want them, so I took them home and built cages for them. I harvested those urchins, there was a loss, but not more than half and we fed them some seaweed and then sold them. It was a 1 hour car ride. I can go to an area with small urchins and put them in a container of water and do my experiment. And take some of Steve's urchins as well.

J. Leask: Go to Elm Island in Sebasco and get junk urchins and take those urchins and move them.

D. Norris: What would you need to do this?

T. De Graaf: A special license.

M. Hunter: it would be a really interesting project for the Research Subcommittee.

C. Richardson: How much would you need? 20 trays?

J. Leask: I don't want to risk a lot, but it needs to be enough.

B. Preney: We moved a lot with Amanda.

D. Norris: A dozen totes, you might be able to with 4 totes ever year and a ledge that came back .

J. Leask: We moved 6 trays and we went back and got them. But in another place we couldn't get back to it that year, so the next year it took off. 20 trays of urchins would need 4 Exactics totes.

R. Russell: We need to really hammer this plan out.

J. Leask: I would like to see some areas shut down.

T. Smith: If we shut down an area, the survey should go out to all industry. I am still not convinced that you need to close down an area.

J. Leask: They are two different things.

T. Smith: I know a spot that has been totally decimated by fishing year after year. It is a good spot that has a small opening to a gut. If I could put 5 trays of mixed urchins back there. There were beautiful round rocks, I have one at home it is one of my treasures, granite round rocks.

Other Business

Next meeting will be Thursday, March 27 @4pm in Brewer. We will be setting the season at this meeting.

Meeting adjourned at 8pm.

Appendix A

Maggie Hunter's Stock Assessment Slide

Maine Sea Urchin Landings from Dealer Reports

Season	Pounds by Season & Zone			Value	Price
	Zone 1	Zone 2	Total	$	$/lb
2000-01	4,426,427	7,391,533	11,817,960	16,119,624	1.36
2001-02	3,202,928	4,647,644	7,850,572	9,717,479	1.24
2002-03	1,952,361	4,748,271	6,700,632	8,758,199	1.31
2003-04	1,293,602	5,040,920	6,334,522	8,860,609	1.40
2004-05	181,343	3,605,753	3,787,096	5,802,979	1.53
2005-06	176,302	3,676,603	3,852,905	5,371,416	1.39
2006-07	225,732	2,803,759	3,029,491	4,581,572	1.51
2007-08	197,173	2,752,055	2,949,228	4,860,788	1.65
2008-09	156,740	2,942,766	3,099,506	5,089,928	1.64
2009-10	101,900	3,011,281	3,113,181	5,902,851	1.90
2010-11	148,767	2,152,866	2,301,633	5,143,371	2.23
2011-12	181,226	2,149,873	2,331,099	5,081,370	2.18
2012-13*	273,371	1,527,941	1,801,312	5,592,801	3.10

**Preliminary, as of 1-17-14, missing a report from one dealer for March 2013.*

Missing report received, 37000 lbs, brings Zone 2 2012-13 to 1,565,000 lbs

Maine Sea Urchin Landings in Pounds

2012–13

Month	Zone 1	Zone 2	Price
9	120,782		$2.38
10		274,959	$2.76
11		204,840	$3.37
12	152,589	450,168	$3.06
1	*	242,937	$3.38
2		219,571	$3.18
3		135,466	$3.61
Total	273,371	1,527,941	$3.10

**January combined with December to preserve dealer confidentiality*

Preliminary, as of 2-13-14.
Missing one dealer report for March.

2013–14

Month	Zone 1	Zone 2	Price
9	182,023		$2.19
10	13,865	314,387	$2.64
11		190,367	$2.54
12	143,069	358,619	$2.97

Extremely preliminary as of 2-13-14, Missing 1 dealer report for Sept., 1 for Oct., 2 for Nov., and 3 for Dec.

Number of Active Harvesters (sold at least 2 lots)

2011–12

	Zone 1	Zone 2	Total
Divers	29	111	140
Draggers	7	94	101
Total	36	205	241

2012–13

	Zone 1	Zone 2	Total
Divers	32	82	114
Draggers	7	75	82
Rakers	0	2	2
Total	39	159	198

Preliminary, as of 1-17-14.

2013–14

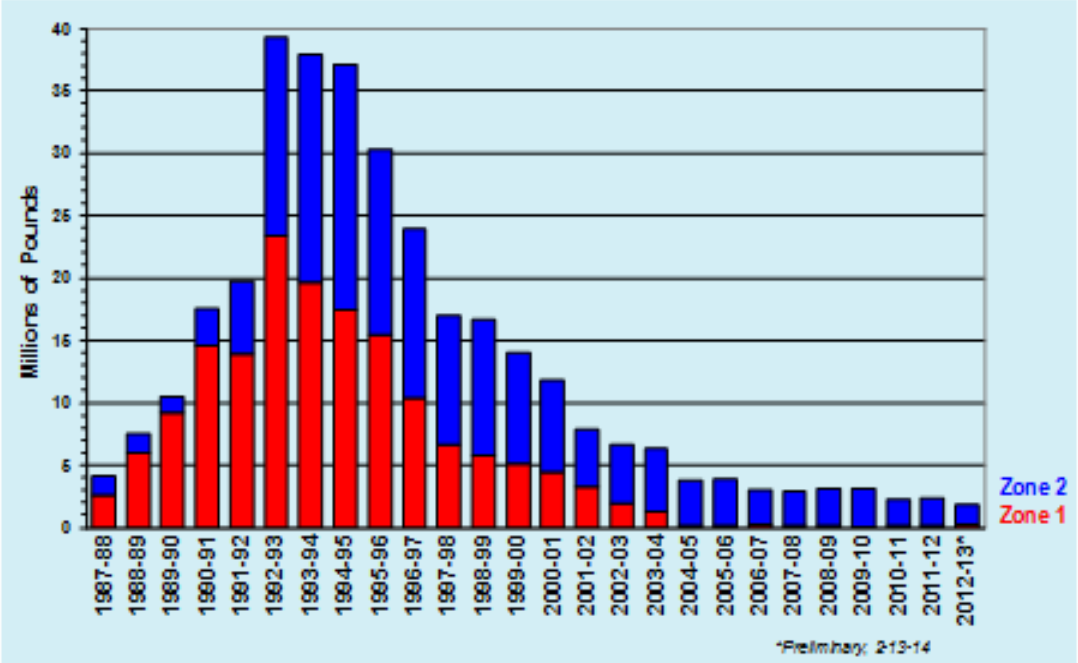
	Zone 1	Zone 2	Total
Divers	37		

Extremely preliminary, as of 2-13-14

Maine Sea Urchin Data Collected by DMR

- Commercial License Sales – since 1992
- Landings (by NMFS port agents) – to 1996
- Landings from Dealer Logbooks – since 1996-97
- Port Samples and Interviews – since 1994-95
- Spring Survey – since 2001
- Zone 1 Harvester Logbooks – new in 2010-11
- Zone 2 Harvester Logbooks – new in 2013-14

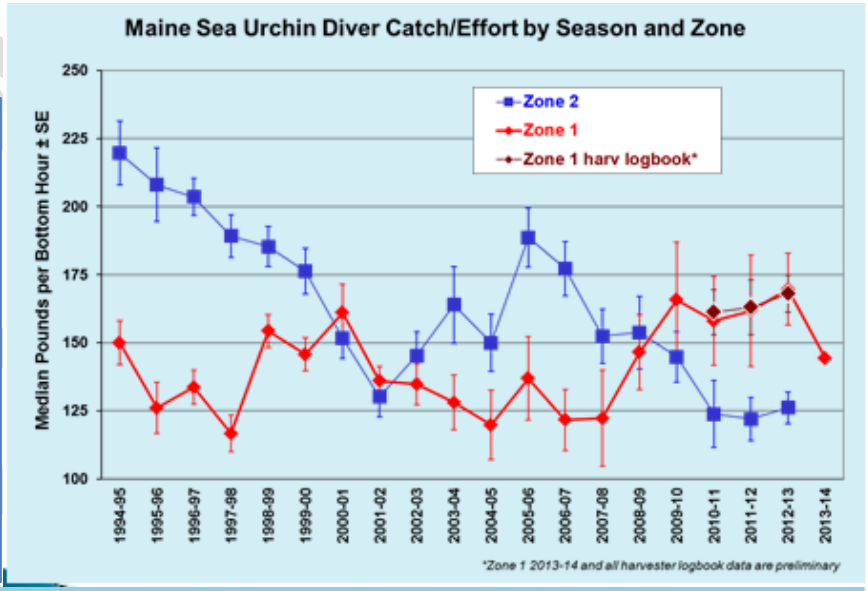
Maine Sea Urchin Landings by Season and Zone



Port Sampling Interviews

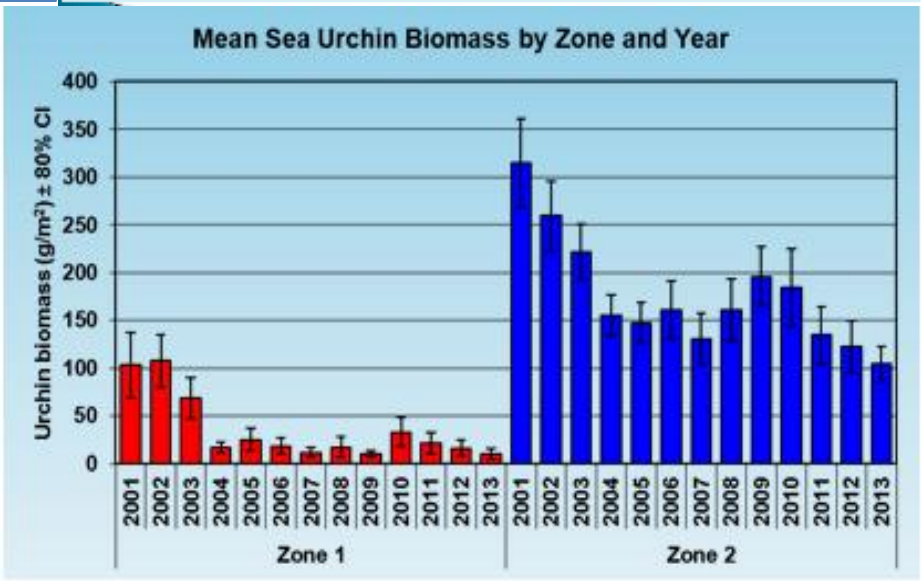
DMR conducted about 73 interviews with divers and 57 interviews with draggers and collected catch samples to weigh and measure during 2012-13.

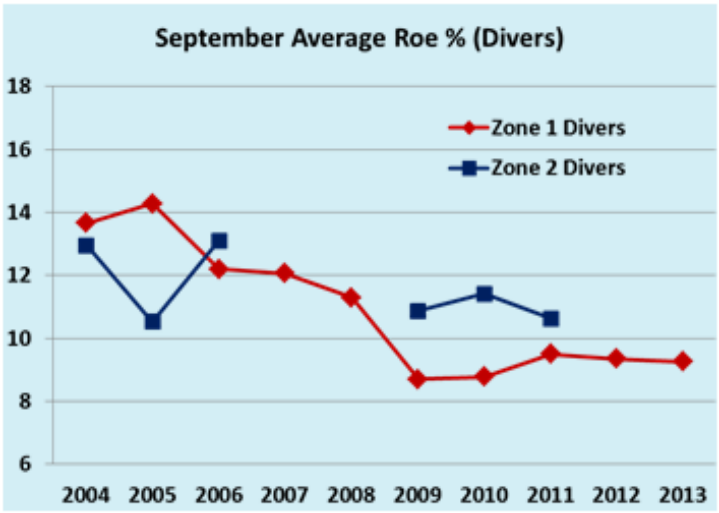
Maine Sea Urchin Diver Catch/Effort by Season and Zone

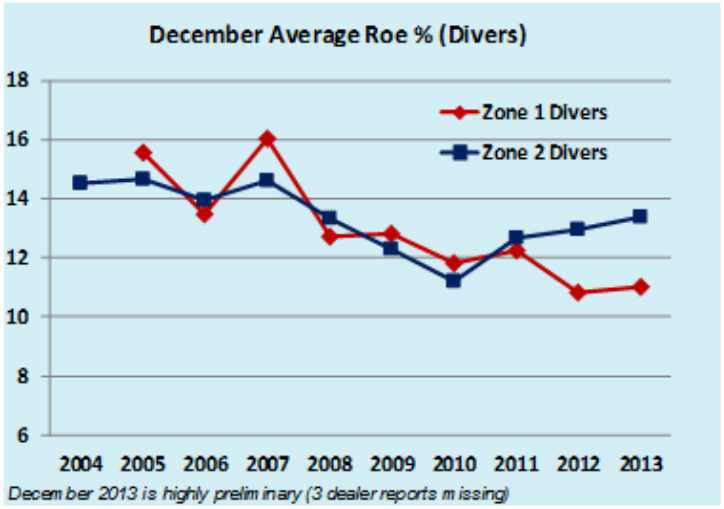


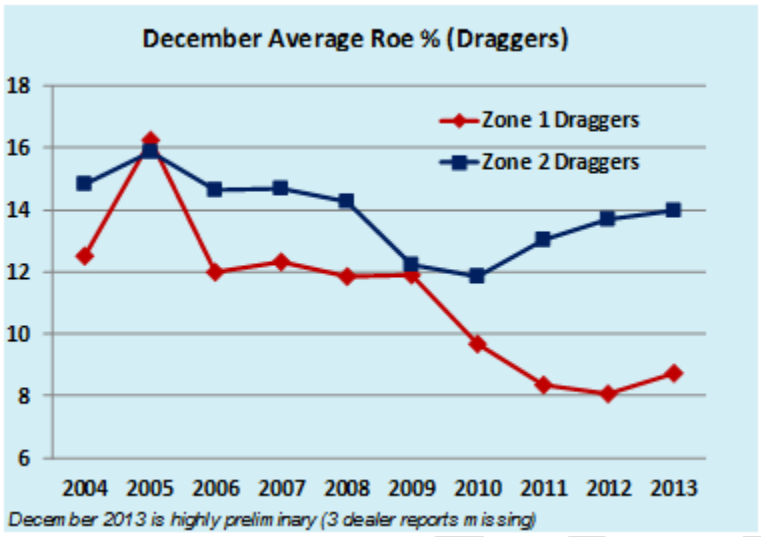
Spring Dive Survey

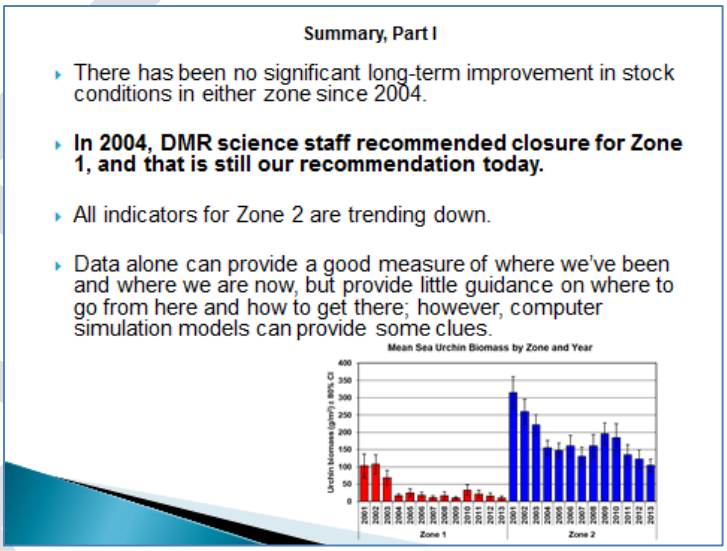
Mean Sea Urchin Biomass by Zone and Year

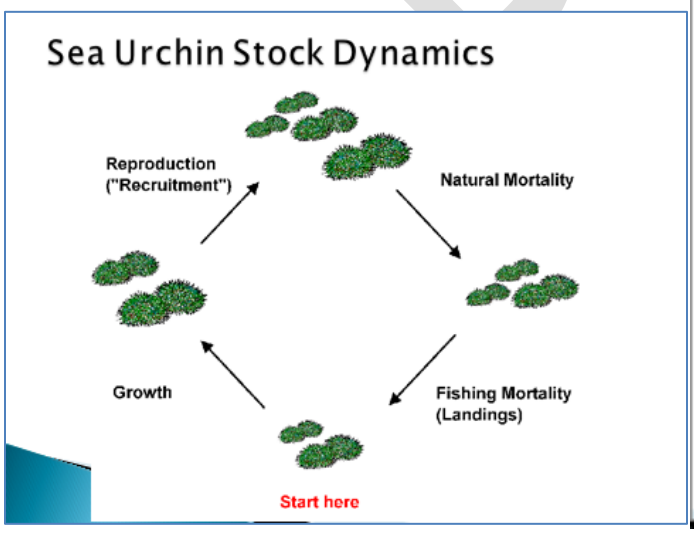


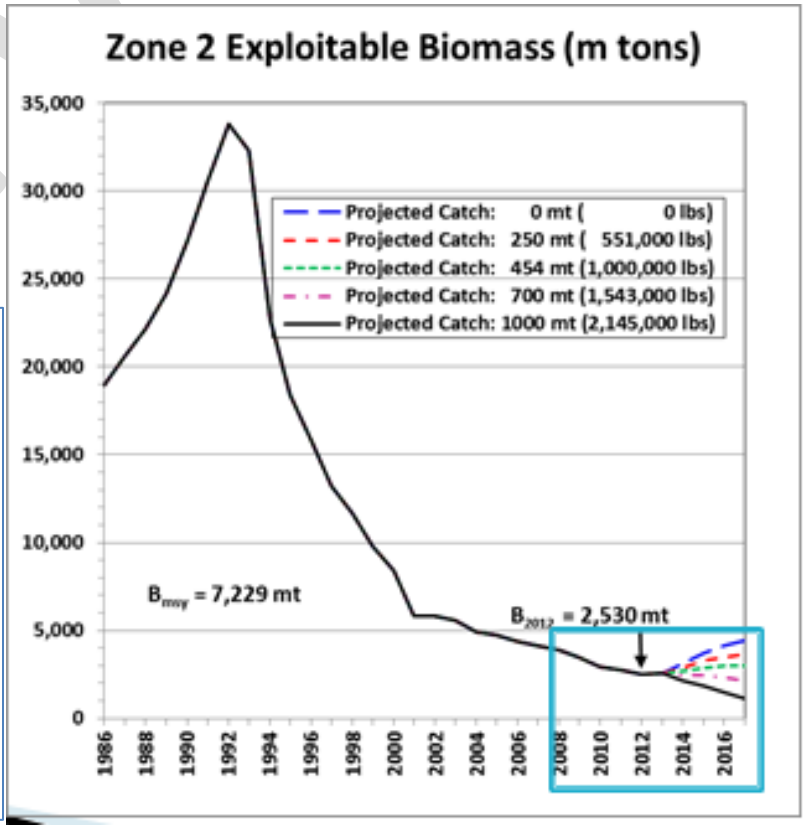

September Average Roe % (Divers)
Zone 1 Divers
Zone 2 Divers
18
16
14
12
10
8
6
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


December Average Roe % (Divers)
Zone 1 Divers
Zone 2 Divers
18
16
14
12
10
8
6
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
December 2013 is highly preliminary (3 dealer reports missing)


December Average Roe % (Draggers)
Zone 1 Draggers
Zone 2 Draggers
18
16
14
12
10
8
6
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
December 2013 is highly preliminary (3 dealer reports missing)

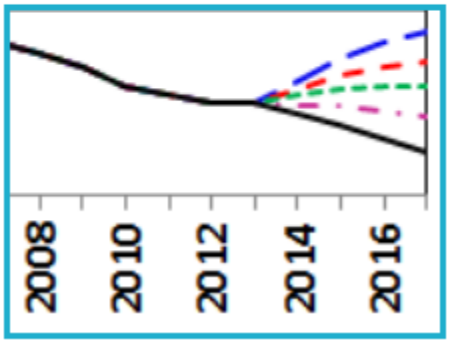

Summary, Part I
There has been no significant long-term improvement in stock conditions in either zone since 2004.
In 2004, DMR science staff recommended closure for Zone 1, and that is still our recommendation today.
All indicators for Zone 2 are trending down.
Data alone can provide a good measure of where we've been and where we are now, but provide little guidance on where to go from here and how to get there; however, computer simulation models can provide some clues.
Mean Sea Urchin Biomass by Zone and Year


Sea Urchin Stock Dynamics
Reproduction ("Recruitment")
Natural Mortality
Growth
Fishing Mortality (Landings)
Start here


Zone 2 Exploitable Biomass (m tons)
Projected Catch: 0 mt (0 lbs)
Projected Catch: 250 mt (551,000 lbs)
Projected Catch: 454 mt (1,000,000 lbs)
Projected Catch: 700 mt (1,543,000 lbs)
Projected Catch: 1000 mt (2,145,000 lbs)
B2013 = 7,229 mt
B2014 = 2,530 mt
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016

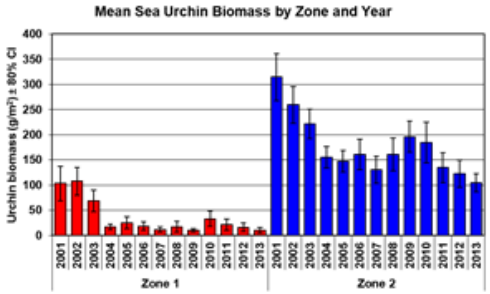
Zone 2 Model Biomass Projections

- Projected Catch: 0 mt (0 lbs)
- Projected Catch: 250 mt (551,000 lbs)
- Projected Catch: 454 mt (1,000,000 lbs)
- Projected Catch: 700 mt (1,543,000 lbs)
- Projected Catch: 1000 mt (2,145,000 lbs)



Summary, Part 2

- **Last year, DMR science staff recommended a 33% reduction in fishing landings or effort for Zone 2 (from 2012-13 levels), and that is still our recommendation today.**



Is the tray limit working?

In October 2012, the average daily catch for one harvester was 709 lbs.
In October 2013, the average daily catch for one harvester was 560 lbs, a 21% reduction

In November 2012, the average daily catch for one harvester was 687 lbs.
In October 2013, the average daily catch for one harvester was 561 lbs, an 18% reduction

(From Dealer reports; 2013 data are very preliminary)

Days	Reduction
45	-25%
44	-22%
43	-19%
42	-17%
41	-14%
40	-11%
39	-8%
38	-6%
37	-3%
36	**0%**
35	3%
34	6%
33	8%
32	11%
31	14%
30	17%
29	19%
28	22%
27	25%

Number of trays:	4	5	6	7	8	9	10
Average reduction for divers and draggers	46%	36%	27%	20%	14%	10%	7%

Mixing and matching these to achieve at least a 23% reduction for Zone 2 with days and trays:

- 44 days, 4-tray limit
- 40 days, 5-tray limit
- 37 days, 6-tray limit
- 34 days, 7-tray limit
- 32 days, 8-tray limit
- 31 days, 9-tray limit
- 30 days, 10-tray limit
- 27 days, no tray limit